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Foreign Bodies in the Eye*

Bernard Samuels, M.D.

THE AUTHOR presents the serious as well as superficial damage that can result from foreign bodies in the eye.

NATURE has provided certain defenses against external harm to the eye, which lies in a rigid socket of bone and is embedded in a cushion of the softest fat in the body so as to guard it against jarring. It is protected by the projecting eyebrow, the nose and the cheek, as well as by the eyelids which automatically close so fast as to have given rise to the expression "in the twinkling of an eye."

In spite of all that nature has done to safeguard it, the eye is subjected to many and various kinds of injury. The most frequent is the ordinary superficial "foreign body" in the eye, such as a bit of dust, a scale of paint, a cinder, or, what is most common, a spicule of steel.

The anterior part of the eyeball, the cornea, is perfectly transparent whereas the posterior part, the sclera, is white and opaque. The cornea and the sclera together form a thick resistant capsule which contains the transparent jelly-like vitreous, the crystalline lens and the aqueous, together with highly specialized vascular and nervous tissues. The sensitive cornea gives instant notice of an insult and many times a gush of tears washes the offending particle away.

A favorite site for a foreign body is under the upper eyelid. When the person is made to look down, the upper lid may be everted with a toothpick swab placed horizontally across it about one-half inch from the border. Usually the particle stands out as a black speck

* Radio talk over Station WNYC, April 25, 1946, under the auspices of the New York Academy of Medicine and the New York Tuberculosis and Health Association, Inc.

against the red background of the tarsus. It is readily removed with a pledget of clean cotton or the border of a fresh handkerchief. The acute pain had been caused by the scratching of the foreign body against the cornea with the movements of the eyelids.

When the foreign body is deposited on the surface of the transparent cornea the accident is fraught with the greatest danger. No nurse, no druggist, no person not specially trained, may attempt its removal with any instrument. The accepted first aid procedure in a case of a foreign body on the cornea is to immobilize the eyelids with a moist dressing and have the patient consult, not the family doctor, but an oculist who is a physician devoting his practice to treating diseases and injuries of the eye. It is an art to remove a particle embedded in the cornea. The cornea, on account of a network of extremely sensitive nerves that lie spread out and exposed on its surface, has been likened to a "live wire." This is the reason that it is utterly impossible for a patient to keep his eye still, no matter how much he tries, when the cornea is touched with even a thread. Oftentimes a foreign body has been tolerated all day but at night, like so many other forms of pain, it becomes unbearable—and at that time no oculist may be available. Immediate professional attention, any time of the day or night, may be had by applying to an eye hospital or to the eye clinic of one of the large hospitals.

Removal of the particle requires instruments that are specially designed for the purpose, a strong light, and a magnifying glass. The patient may strenuously object to the final step in the procedure—that is the closure of the eye with a patch—because at the moment the eye feels comfortable. However, when the anaesthetic wears off, if the lids are permitted to rub over the exposed nerves in the raw and rough depression left by the foreign body, pain and tearing may return and be worse than before, and the patient will insist that the particle is still present. A patch over his eye serves a three-fold purpose: first, it prevents the return of pain; second, it gives the defect in the cornea a better chance to heal; and third, it prevents infection and possible loss of the eye.

There is one accident to the eye that requires fast thinking. Whenever a caustic or corrosive material of any kind—such as lime or lye or polishing fluid—gains entrance into an eye, one

should forthwith copiously flush the eye with water and continue to do so until professional aid can be had.

I am especially pleased to take advantage of this opportunity to speak to the young mothers who are the natural guardians of the eyesight of the coming generation. Of the total number of causes of blindness in childhood, injury is responsible for 8 per cent. It is during the early running-around period of childhood that many of the worst accidents to the eyes occur. This period is doubly perilous because a small child, when he gets hold of a sharp knife or scissors or a pointed stick, is in danger of poking it into his own eye or, what is more likely, into the eye of a playmate. Every Fourth of July some newspaper records a tragedy—a child's eye injured or put out by a fragment broken off from the copper percussion cap of a toy pistol. The sale of air rifles and BB guns should be prohibited by legislation, and is, in many localities.

A word of caution to youngsters. Never throw anything directly into the face of a playmate. Many a boy has had to go through life with an eye damaged or lost by a blow received in this thoughtless way. On your outings in the country beware of blasting caps that have been carelessly left by workmen who use them in mining and in blasting tree stumps and ditches. When these caps are tampered with or thrown into a bonfire they hurl in all directions fragments of metal that may destroy one eye or both, as well as blow off fingers and hands.

In connection with penetrating wounds in the eye, there is a dire disease that goes under the name of sympathetic ophthalmia. Parents with growing children should be well informed about this disease. It is a violent inflammation, which, after a perforating wound in one eye, attacks both eyes at the same time, the injured and the uninjured, called respectively the exciting and the sympathizing eye. Once this disease sets in the end is total blindness. A child's perforated eye is known to be more in danger of sympathetic ophthalmia than an adult's. The inflammation may break out a few weeks after the injury or, what is unaccountably strange, it may be ten, twenty, or forty years after. It is particularly likely to occur after the white of the eye has been penetrated—hence this region is called the danger zone. The chief reason for the removal of

a severely wounded eye is the fear that, at some future time, it may produce sympathetic ophthalmia.

So far my remarks have been confined to what may be termed non-occupational accidents. Turning to industrial accidents, which happen mostly to men in the prime of life, statistics show that the number of workers in industry who receive injury to one or both eyes runs into thousands every year. It is estimated that particles of steel compose about 98 per cent of all foreign bodies that penetrate and lodge within the eyeball. The remaining one or two per cent are either glass, copper, or various non-magnetic metals.

Some 80 per cent of these intra-ocular foreign bodies originate in the mushroomed edge of a cold chisel, a steel drill, or a steel hammer—usually of cheap quality, otherwise the edge would not mushroom. In a number of instances examination of the hammer or chisel has revealed the point on the mushroomed edge from which the steel had been chipped off, and sometimes the particle taken from the eye has been found to fit exactly into the defect of the mushroomed edge. It is generally a glancing blow that causes the particle to break off. It travels with terrific speed, rotating at the same time on its own axis and thus producing the effect of a flying buzz saw. If it were not for the rotating action it is questionable how many of these particles of steel would be able to pierce the tough wall of the eye. As to size and shape, they are generally very small and flat, with sharp borders.

It is possible for a foreign body to penetrate the eyeball without the injured person's being aware of it. There is the story of a boy with an inflamed eye which was believed to have been caused by contusion from a feather pillow thrown by a playmate. The x-ray revealed a foreign body in the eye—when or how it got there was never ascertained. If a spicule of steel remains in the eye a long time and the person had always had blue eyes his attention may be called to the injured eye by the brown appearance of the iris. This change in color from blue to brown is caused by the salts of iron—just as a bit of iron wrapped in a white cloth and left in water will stain the cloth brown. Whenever there is the slightest doubt an x-ray should be made of the eyeball. A bit of steel the size of the point of a fine needle will throw a shadow and can be accurately localized.

Fortunately, most eye injuries are preventable. Against almost every eye hazard in industry there is a safeguard, namely, the wearing of goggles—a better term being safety glasses. However, mechanics will not wear goggles unless they are comfortable and do not steam up. Goggles are made of non-shatterable glass and, when necessary, a lens may be ground into the glass to improve the sight so that safety glasses may not only serve the humane purpose of saving an eye but they may also add to the efficiency of the wearer. Safety glasses designed for women are now manufactured, emphasis being placed on lightness and cosmetic effect. Every workman should have his own individual safety glasses, made to fit him accurately. In some large plants an ambulatory repair service is provided to see that the goggles are kept in order and periodically sterilized, and foremen are instructed to report to the management every man exposed to danger who refuses to make use of protective measures.

In the occupation of abrasive blasting, seen often by pedestrians on the street in the renovation of house fronts, the eyes and the face should be protected from blows of fast-flying bodies and the lungs from the inhalation of dust. Here goggles alone are not sufficient and therefore a helmet or hood is also provided.

Finally, artificial methods for protecting the organs of vision against trauma in industry have been so perfected that when they are universally adopted an eye accident among mechanics will be of rare occurrence. Unhappily, in war no means has been devised to protect the eyes against bullets and against metallic missiles hurled from exploding shells.

Some Aspects of a Local Prevention of Blindness Program*

Margaret R. Osterman

DESCRIBES the principles, bylaws, functions, and practical working out of the District of Columbia prevention of blindness program.

IN considering the development of a prevention of blindness program on the local level several facts about the District of Columbia are pertinent. According to the Board of Trade, the population is one million and forty-one thousand people. However, this includes not only the District of Columbia, but also the four surrounding counties. It makes up what is known as the Metropolitan Area. For a small agency such as ours, with limited staff and limited budget, to serve a community of this size is not only a challenge but a tax on the ingenuity of the most imaginative. The entire Metropolitan Area has just undergone a survey by three prominent authorities in the field of health education. Their main recommendation as far as the District of Columbia Society for the Prevention of Blindness was concerned was that the Society expand its activities to include the four neighboring counties. Our attempts to do so will be discussed later.

Another important factor in this community is that it has no government of its own and the residents have no vote. The surveyors felt that this was a decided handicap in trying to develop a well-integrated health and welfare program; and indeed it is a problem. It is to be hoped that it will not be long before the District of Columbia has suffrage.

Before proceeding to a discussion of the structure of the Society, it would be well to list some of the agencies with which the Society

* Presented at the Eye Institute, National Society for the Prevention of Blindness, June, 1946.

works. They are the Board of Education; the Columbia Polytechnic Institute for the Blind, Inc. (a workshop is maintained and proceeds are sold for the benefit of the blind and it employs an instructor who teaches braille, typing, dictaphone operating, and handicrafts); the D. C. Association of Workers for the Blind; D. C. Optometric Society; D. C. Rehabilitation Service; the Family Service Association, with particular reference to its department for the blind; the eye clinics in the District of Columbia; the D. C. Health Department; Health Security Administration which is a central admitting bureau for the voluntary hospitals for patients who need financial assistance; the Hurt Home for the Blind; the D. C. Medical Society; the Medico-Chirurgical Society, Inc.; the Social Hygiene Society, the Public Assistance and Children's Services of the D. C. Board of Public Welfare; the Veterans Administration; the Veterans Administration Facility; the Washington Society for the Blind; and the ophthalmologists and others.

Structure of the Society

Because, according to all principles of social work, function is intimately tied up with agency structure, it is important to point out something about the structure of the D. C. Society. It operates as a private social agency under the administration of an executive director who is responsible to the Board of Trustees, composed of twenty-one lay and professional individuals. One of the accomplishments of the last president of the Board was to stabilize the Board. Some of the Trustees had been in office for many years, in fact, since the beginning, and it seemed important to take into the group other members of the community who would, in their turn, go off the Board and back into the community trained in the work of the organization. As indicated, the Board was stabilized, and is a rotating one, seven new Trustees being elected each year. However, there are still certain community groups which are not represented. There is an Advisory Board of nine members, the function of which is a consultative one. For example, when laying the ground work for Sight-Saving Month this fall, each member of the Advisory Board will be asked for his suggestions.

The Society was founded and incorporated in 1936 by Dr. William Holland Wilmer, Wilmer Eye Institute, Johns Hopkins

Hospital, and by Mrs. Allen L. Vories, a lay woman who had worked with the blind in Louisiana and who was very much aware of what blindness could mean to an individual and to the community.

Originally, the Society was supported by donations which from an administrative standpoint was quite cumbersome, time consuming, and expensive. During the war, the organization received its income from the Community War Fund, and the latter, believing that the agency was a permanent one rather than a war agency, suggested that the Society apply for membership in the Community Chest. This was done, and it was accepted as a Chest agency. As such, there are additional responsibilities with emphasis upon those of an administrative nature; but there are also certain advantages besides financial.

Budget.—As indicated, the budget is small, less than ten thousand dollars a year. After salaries are paid, little is left for program. A larger budget has been requested for 1947, and this will assist in planning a broader program. One way to amplify the budget is to have a paying membership. There are advantages and disadvantages. One cannot know until it is tried whether it would pay both in terms of developing interest in the community and in an increased amount of money. This would be a good point for discussion.

Bylaws.—During the last three years the bylaws have been revised and brought up to date. This is something, of course, which needs attention every few years to keep up with the development of the agency and to meet ever-changing needs in the community. An example of this is that according to the present bylaws there are to be six Board meetings a year, including an annual meeting. It may be necessary to amend the bylaws in order to provide for more Board meetings since the Society is now a Chest agency.

Committees.—With the growth and development of the Society has come a growth both in committees and in community participation. There are both standing and special committees. Among the former are:

The Executive Committee, which meets prior to every Board meeting and which makes decisions during the intervals between Board meetings.

The Budget Committee, which functions largely in an advisory capacity when the annual budget is prepared.

The Publications Committee, which consists of one individual who is an educator, and of specialists who are consulted in relation to appropriate technical material, and which reads all the material to be published in permanent form by the Society.

The Personnel Policies Committee, which helped to prepare a statement in regard to vacations, sick leave, termination of employment, and other factors.

The Legislative Committee, which is concerned with appropriate local and national matters is self-explanatory. As a matter of policy, it has become necessary to adhere, as far as legislation is concerned, to matters which apply directly to the work of the Society. For example, considerable time was spent in the early days in actively supporting legislation to control ophthalmia neonatorum. The Society has also been interested in higher salaries for teachers, particularly those in charge of the education of partially seeing children. The Society was instrumental in helping to secure an appropriation for a school oculist. Lately, a great deal of effort has been spent on the bill to control the practice of optometry in the District of Columbia. The problem has been for the optometrists and the ophthalmologists to come to an agreement as to the definition of the practice of optometry. The Corporation Counsel has been anxious to secure the backing of the District Medical Society and the D. C. Society for the Prevention of Blindness.

The Volunteer Committee, whose important responsibility it is to help the executive director in interesting lay people to contribute their services to the work of the agency.

Special committees consist of the following:

The Audit Committee, which officially audits the books of the agency.

The Nominating Committee, elected by the trustees rather than appointed by the president of the Board of Trustees, which prepares for the Annual Meeting a slate of individuals to be elected to the Board for the next term. The officers are elected by the new Board of Trustees at the meeting following the Annual Meeting.

The Committee on A Nursery School for Partially Sighted Children, which is studying the need for such a resource because of an inquiry from an outside group. This committee consists of trustees, lay women, Junior League members, specialists in child welfare, nursing, members of the group which instituted the project, educators, and others.

The Committee on Sight-Saving Month, which is working on plans to designate one month in the fall as Sight-Saving Month. This is a practical way to bring the counties into the picture. It will include representatives from the neighboring counties, and the chairman is a trustee who lives and teaches in one of these counties.

The Committee on the Annual Meeting, which includes not only trustees of the Society, but other individuals from the community. The Annual Meeting is designated by the bylaws.

A Committee on Awards, which is giving consideration to making an award this year in the field of sight conservation. This includes two possibilities—an award to an individual and an award to a group. There is some thought being given to making an award to the group which has financially supported one of the Society's projects.

A Committee on Scholarship, which hopes to build a scholarship fund to assist the training of various personnel in this specialized field and which consists of trustees and school officials.

Many of you, doubtless, have read *Voluntary Health Agencies—An Interpretive Study* by Selskar M. Gunn and Philip S. Platt, which was done under the auspices of the National Health Council.* As you recall, the authors point out that one of the essential principles of community program planning is a broad program. Breadth of outlook is most important. One way to approach this problem is to have a committee on growth and development whose main responsibility this will be. Ideally, it should include not only trustees but also representatives from the community at large, both lay and professional individuals. Since it has been recommended that the Society work toward including the counties of the Metropolitan Area, the inclusion of educators, public health workers, social workers, lay people, and others on such a committee would seem indicated. This is the goal toward which we are now working.

Staff.—Personnel policies and the budget, as now established, provide for only two paid employees: the executive director and the secretary. Both positions have been analyzed by the Community Chest and are on file with the Job Classification and Salary Scale Committee of the Community Chest. For the past two years, however, the executive director has supervised a medical social worker

* The Ronald Press Company, 1945, New York, N. Y.

who is doing a demonstration in a hospital in the community. Since February, 1945, the Society has been supplying two field work placements for graduate students in group work. The executive director did not serve as the official supervisor since she is, herself, a medical social worker, not a group worker, but she was requested to make an evaluation of the work done by each student.

From time to time, volunteers have been available. They are, doubtless, an excellent interpretive medium as well as a practical source of manpower. There has been a corresponding growth in the use of volunteers with the growth of the Society. In Washington there is an organization which supplies agencies with volunteer help. There are other resources, such as the youth organizations in the churches, the Junior League of Washington, the Washington Boys Club, the Boy and Girl Scouts, the Girl Reserves, etc. However, such children really have very little time to give, unless it might be to deliver pamphlets and posters during some particular educational campaign.

Finally, in regard to staff, there is a small amount in the budget for supplemental clerical help when the occasion demands.

Special Office Equipment.—A duplicating machine and an addressing machine facilitates the preparation and mailing of educational material and of keeping those on the mailing list informed of the Society's activities.

Purpose and Functions of the Society

The purpose of the Society is to stimulate and promote all activities which will prevent blindness and conserve vision in the fields of education, health, industrial safety, and welfare. It does not offer case work services, although in making referrals to other agencies and in discussing personal problems with individuals an effort is made to use essential principles of case work. The question arises as to how to carry out this purpose. The answer is not a simple one, and possibly the best way to get at the methods used is to cite some general working principles, giving examples as we proceed.

Integration of Community Resources.—The purpose of the Society is first of all effected by working with public and private organizations in regard to problems pertaining to sight conservation, emphasizing the need for the integration and development of

community resources to meet these problems. Three examples of this are:

(1) The visual screening program which was carried on extensively by the Society working with the school officials, the Health Department, and parents who were trained as volunteers. This finally resulted in the incorporation in the school health program of an annual vision-testing program. Another result of this activity was the appointment of a school oculist under whose supervision the school eye health program is now carried on.

(2) The sight-saving classes in the public schools which were an outgrowth of a committee which was started by the woman who was later to be one of the founders of the Society. This committee worked out from the Council of Social Agencies since the Society had not even been founded at that time. Others on this committee included individuals from the Board of Education and the Health Department.

(3) The establishment of group activities for children with limited vision. This project involved the cooperation of one of the schools of social work which furnished graduate students as group leaders, the city recreation department, one of the local settlement houses, the local Children's Museum, both of whom supplied a meeting place, and the Red Cross Motor Corps.

Interpretive Function of Society.—Another function of the Society is that of acting as a liaison between individuals with personal problems caused by limited vision and professional individuals trained to help them. It also acts as an interpretive medium between social agencies and between the Society and the community. Some examples are as follows:

(1) Many individuals request information or express a need which can best be solved by consulting another agency. The proper referral must, of course, be predicated upon comprehension of the basic problem and upon the knowledge of community resources.

(2) An example of the interpretation of one agency to another and to the community has been the preparation and publication of the *Directory of Eye Care Facilities in the District of Columbia*.

Surveys.—One of our working principles is that specific needs in this field can be determined by surveys, and we should likewise encourage others to make surveys in this field.

(1) An example is a survey which was recently made to determine whether there were sufficient community resources for eyeglasses for those who could not afford to pay for them.

(2) Another example is three dissertation projects conducted by students in a school of social work, namely: "A Follow-Up Study of Thirty-Eight Cases of Ophthalmia Neonatorum," by Evelyn Walker; "A Social Study of Disabling Eye Injuries Resulting from Industrial Accidents," by Eva Margaret Neiters; and "The Use of Group Work Activities in Alleviating Frustrations among Members of a Minority Group," by Hazel Braxton.

(3) Another example is the survey which will be made to find out whether there is a need for a nursery school for the partially sighted children.

Demonstrations.—Another working principle is that the actual demonstration of a needed service will in time cause the public agency to see the need for incorporating this function in its program.

(1) Vision testing was carried on in the District of Columbia nursery schools almost two years ago with the hope that the Health Department would be able to continue to do this when the nursing shortage improves. A sufficient number of visual defects was found which would seem to make this worth while in the future. A letter recommending this was sent to the Director of the Bureau for Nursing in the Health Department.

(2) Another example of this has been the vision testing of children in a private school, with the result that in the future the director of the school plans to require an eye examination for every child entering the school. Some provision, however, should be made for the child's vision to be checked every year as well as at the time of entrance to school because of the development of an eye condition such as myopia.

(3) An important phase of our demonstration work has been the promotion of services and programs as needed in already established organizations, as was achieved in the placement of a medical social worker in the already established glaucoma clinic at the local eye, ear, and throat hospital. This project included the determination of the need for this type of service, the working out of the general plans from the administration and functional standpoint, the process of interesting the hospital in the project, the securing of financial support for the project from an outside group, securing the services of a case worker, arranging for the supervision of the worker and also a final recommendation that a department of medical social service be established in this hospital which would

include within it the continuance of this service to glaucoma patients.

Special Training.—Another working principle is encouraging special training for those in related agencies working with eye problems.

(1) A number of years ago the Society held an eye institute which included lectures by numerous ophthalmologists on eye health, designed particularly for professional individuals in related fields. More recently, a course in eye diseases with their social and psychological implications was given by an ophthalmologist under the auspices of the Society. Included in the group were nurses, social workers—both generic and medical—vocational rehabilitation counselors, and a few lay people.

(2) At present, the Society is offering a scholarship for a teacher who would be qualified for and interested in specializing in the teaching of partially sighted children.

Public Information.—An important part of the Society's educational program is carried on through the dissemination of information pertaining to the prevention of blindness and sight conservation; the use of such methods as the making of awards, sponsoring of contests, the holding of exhibits, the maintenance of an information service and a library, the promotion of visual education through the scheduling of films, the displaying of posters and the distribution of pamphlets, the promotion of radio programs, and the scheduling of talks on related subjects.

As C. Edith Kerby points out so well in her article, "Effective Methods in the Development of a Prevention of Blindness Program,"* part of any program must be suited to the particular needs of the community. I should like to add, not only to the need, but to the feeling or tempo of the community.

One of the basic responsibilities is to give information on the prevention of blindness to all groups or individuals, wherever and whenever possible. The degree to which this is done will depend upon one's own imagination as well as knowledge of community structure and organization. One way in which to get to individuals who may not otherwise be reached is through contests. The Society has had several contests throughout the last few years, two of which were among school children, and one was among students in com-

* Published in *THE SIGHT-SAVING REVIEW*, Vol. XVI, No. 1, Spring, 1946.

mercial art schools. The teachers assumed the rôles of mentor and adviser, and the Society established the rules, secured and distributed appropriate material on eye health to the students, and handled the judging and publicity. In one contest, an attractive seal was acquired for the Society; and, as a result of the poster contest, twenty designs were obtained for our health educational program. In the last contest, a number of editorials on sight conservation and prevention of blindness were secured. The contests were, therefore, educational for the participants and other students in the school, and for the general public, as well as functional—having resulted in a supply of educational material which can profitably be used in the Society's program.

Exhibits are an effective means of health education. The range and variety would seem to be limited only by the community's need, the ideas being presented, and the planner's imagination. One example is a puppet show on lighting which was prepared by the electric company in Birmingham, Alabama. It was handled as a cooperative venture between the schools and the power company. At our request, the electric power company in the District is constructing a duplicate, to be used in the schools and at lay meetings. Employees of the utility company will probably operate the puppets.

The Society has made no special effort to conduct an educational program in the government agencies because of the limited nature of staff and budget. However, from time to time, requests for service have been received. One such has recently been made by the Navy Department for an exhibit on eyes—something which would include the more common eye conditions. An automatic projector which will accommodate two-inch slides will be used as the basis of the exhibit. The plan is to illustrate the general principles of eye health through a model of an eye, posters on eye health, the designs for which will be made by the Navy Department, pamphlets, a light meter, and models of food—placing the emphasis upon the importance of good general health.

Mrs. Russell Roller* makes excellent wax food models and has a price list which she will send upon request. These models are not inexpensive, but one can make some of the models himself. For ex-

* Mrs. Russell Roller, 7135 Chestnut Street, N.W., Washington, D. C.

ample, jelly can be made by coloring wax the desired shade. A slice of bread which is covered with wax will last about three years. This exhibit will be observed by employees of the Navy Department as they go to the cafeteria. It will continue for one week. An attendant will be present at all times to counsel individuals on eye health problems and to answer any questions regarding the exhibit. I should like only to mention some of the places where the Society has participated in, or presented, an original exhibit. Exhibits have been arranged for meetings of the Medical Society, the P.T.A. Summer Round-Up, city-wide meetings of the P.T.A., windows of a social agency, as well as in the window of another business building, a large department store, the national headquarters of the American Automobile Association, public schools, and nursing offices.

With the acquisition of three films on sight conservation and with the showing of them to more than seventeen thousand high school students, teachers, and lay people within the last three months, a beginning has been made in a visual educational program in eye health. The films include: "Eyes for Tomorrow," "How the Eyes Function," and "Your Children's Eyes." These films, so far, have been used at P.T.A. meetings, for school assembly periods, for physical education classes, for biology classes, and at club meetings. The response has been good. Another film which could be used in vocational education classes is called "Your Richest Gift." It tells the story of what happens when eyes are not protected in industry. It is not possible to purchase this film, but it may be borrowed from the Owens-Illinois Glass Company in Toledo, Ohio. The film, "Light is What You Make It," a new sound movie in technicolor produced by the Walt Disney Productions for the Better Light-Better Sight Bureau, should be a valuable asset in planning a program on eye health. It is our understanding that the lighting company in your community would have a print of it. In the April issue of *Better Light-Better Sight News*, there is a résumé of a new sound slide film on home lighting called "See For Yourself." A need in this field would seem to be a film directed toward the office worker, with emphasis upon refractive errors, the more common eye defects or conditions, such as chalazions, styes, conjunctivitis, and others, with attention to eye working habits, including lighting, posture,

and all related factors. The Society has found that a volunteer can do much to stimulate, just by telephone calls, the use of the films in the schools.

One of the direct services of the Society is the information service. As the result of various kinds of educational publicity, individuals, both lay and professional, come to the office or telephone for information regarding eyes. The questions are many and varied, and they offer an opportunity not only to give that specific information but an explanation of the function of other agencies or more information about the Society.

An organization such as the Society should maintain a library in this field. Since its origin, it has kept a file of the publications of the National Society for the Prevention of Blindness. Books, pamphlets, and posters on related subjects are available for use by professional and lay individuals.

The Society has adopted the policy of preparing or having prepared pamphlets for lay consumption, as well as a monthly or bi-monthly newsletter or bulletin which is sent to a steadily growing mailing list.

Pamphlets published by the Society are: "Care of the Baby's Eyes," "Care of the Children's Eyes," "Children with Visual Limitations," "Your Eyes—General Principles of Eye Health," "Eye Health and Nutrition." The article, "Children with Visual Limitations," was published in the SIGHT-SAVING REVIEW. Another article published in the SIGHT-SAVING REVIEW was "Medical Social Service with Glaucoma Patients." Both of these were reprinted by the National Society for the Prevention of Blindness. At our request, a physician is preparing a pamphlet for the Society on "Care of the Eyes of the Aged." With the increase in the span of life there is a need for such material.

Once something is published, it is used to the greatest extent possible in whatever way or form would seem practical and beneficial. Requests from other organizations to reprint our material, including one by the U. S. Office of Education for use in a Chinese health program, are gratifying and offer some gauge as to the merit and usefulness of the material.

Newspaper publicity on the educational level was at a low ebb, of course, during the war, and even today it is quite difficult to get

articles into the papers unless they have news value. Occasionally, the Society has been able to get an article which was primarily educational into the papers, but usually this is when a reporter had some personal interest in sight conservation and, because of his own problem, could see the need for such an article. Since the initiation of a new project usually has news value, this is likely to be material in which the newspapers would be interested. Every agency, however, cannot be constantly producing new projects, but it would seem wise, if possible, to try to space them at occasional intervals throughout the year so as to keep the public constantly aware of the work and of the service offered.

Fundamentally, there are two main purposes as far as newspaper publicity is concerned: first, the educational value of the material; and, second, the need to interpret the work of the agency. An important aspect of the latter is the fact that it is a service to the public—it is not limited to the underprivileged, but is meant for each citizen, no matter what his economic status may be. It is unfortunate that social agencies are so often considered organizations designed to render service to the poor rather than to the general public. It is our job to overcome this misconception. This may be a slow process, but if done thoughtfully and soundly, the goal will be reached.

Radio programs are an entity in themselves. In the past, we have planned for and participated in a number of radio programs. The field of prevention of blindness and sight conservation offers a great deal of material which not only has educational value but, if properly handled, considerable dramatic appeal as well. The new relationship with the Community Chest will affect the work done with radio programs and, doubtless, for the better, as the Chest has someone working specifically in that area. This has already resulted in a program for June 29, on "Eye Care in the Summer." In the past, the Society had prepared its own scripts. One program which was quite effective was done to emphasize National Social Hygiene Day. It was in the form of a discussion on the relationship between the control of venereal diseases and the prevention of blindness and conservation of sight. Participants were the syphilologist on the staff of the Health Department, and the school oculist, with the executive secretary of the District

Social Hygiene Society as moderator. This was done several years ago, and, this past year, at the request of the Social Hygiene Society, the script was used again over another radio station.

There seems little point in discussing lectures and speeches, other than to say that one person does not have time to do much along this line unless he can organize a Speakers Bureau made up of volunteers. Then, there will arise the problem of agreeing upon a suitable time for those involved. The executive director has spoken to various lay and professional groups including the physicians in the Child Health Clinics maintained by the Health Department, student nurses in hospitals, resident physicians in the specialized eye hospital, church, and parents and teachers groups.

The distribution of educational materials is a problem in itself. Certain pamphlets should be given out only on an individual basis. However, the material published by the Society is prepared largely for lay consumption. "Care of the Baby's Eyes" has been used quite extensively. In fact, twelve thousand copies have been distributed through the diaper services, child health and maternal health clinics, eye clinics, parents and teachers meetings, homes for unwed mothers, preschool child care facilities, the Department of Public Assistance, parochial and private schools, the U. S. Public Health Service, drug stores, prevention of blindness agencies, social agencies working with children, health committees of the labor unions, public libraries, the U. S. Information Service, and others. "Care of the Children's Eyes" has just come off the press, but plans for its distribution will be widespread and as inclusive as possible. Forty thousand copies of "Your Eyes—The General Principles of Eye Health" have been distributed to drug stores, the central and branch libraries, the special libraries in the District of Columbia, some of the government agencies including the Federal Works Agency, the Navy Department, U. S. Office of Education, the U. S. Office of Information which sent them to libraries throughout the country, the Veterans Administration, public and private schools, nursing offices, P.T.A. meetings, members of the Budget Committee of the Community Chest, local hospitals and medical centers, physicians in child health and maternal health clinics, local social agencies, high school students participating in the editorial contest, employee counselors in the governmental agencies, lay

people who read the bulletin or see exhibits and write in for material, private nursery schools, the Red Cross, pharmacies, committees, and others. "Children with Visual Limitations" was written as a result of our experience with the children in the sight-saving classes. It was obvious that many of them had serious problems which merited attention. We thought that one way in which to get at some of these problems was to prepare this pamphlet. Its distribution would naturally be small and somewhat limited. The same applied to the article on "Medical Social Service with Glaucoma Patients." The pamphlet "What the Physician Can Do To Prevent Blindness in the Preschool Child" originally was written by the pediatrician, Dr. Philip Stimson of New York City. We secured his permission to edit it from the standpoint of the general practitioner. This would have somewhat of a limited distribution, and has been handled in this way. However, it would seem that parents and even nurses might learn something from it. Dr. Benjamin Rones, at our request, has just prepared a pamphlet, "Eye Health and Nutrition."

Copies of *The Directory of Eye Care Facilities in the District of Columbia* have been distributed to every professional and lay individual or group who might be interested. The supply has been exhausted and when it is printed again it would seem well to include eye care facilities in the entire Metropolitan Area, if funds permit.

Material of various kinds has been purchased from the National Society, and the following pamphlets have been used especially in our program: "Care of the Eyes in Middle Age," "First Aid for Eye Injuries," "What Everyone Should Know About Glaucoma," "Signs of Eye Trouble in Children" (the last mentioned has just been printed in an enlarged size to be used for bulletin boards in schools, in nurseries, in clinics, and in homes), "When Shadows Fall," and other material particularly designed for the professional individual.

Posters are used in our educational program. The Society found it necessary to have its own poster designs, and has six different posters, five rather specific ones dealing with lighting, nutrition, cleanliness, and a general poster on the prevention of blindness. These have been distributed to the nursery schools and elementary grades, both public and private, as well as parochial, to P.T.A.

meetings, to the eye and general clinics, to the Department of Public Assistance, and to other social agencies where they might be applicable. Some were placed in a toy shop; some were used by the schools in exhibits and by the Society in window displays. The poster designed to show the relationship between good nutrition and healthy eyes was displayed in one of the large chains of grocery stores throughout the city.

During Sight-Saving Week last year, posters were placed upon the front of street cars and in stores. Some of this distribution was done by one of the boy's clubs in Washington and by the Girl and Boy Scouts in some of the counties.

Other material of an educational nature includes memos on new projects which have been sent to physicians who would be interested, both eye physicians and pediatricians, and articles of interpretation which have been prepared for a specific publication in the community, such as the newspapers, shopping news, the publication of the Council of Social Agencies, publications of the Community War Fund and the Community Chest, and others.

Earlier, there was reference to the demonstration* of medical social service with glaucoma patients, a project which has held the interest and attention of the Society for several years. The medical social case worker started with 56 glaucoma patients and now has 190 on record. The ultimate result of the demonstration with this particular group of patients will probably lead to medical social service for all patients in this hospital, which specializes in the treatment of eye, ear, and throat diseases.

Some Specific Projects

When describing working principles, group activities with partially sighted children were mentioned. Our experience with these children has led not only to an interest in the relationship between group work and case work, but also to an awareness of and concern for the individual problems of each child. These problems are numerous and date back to early infancy and to their relationships with their parents. This raises the question as to how to reach the parents so as to prevent minor problems from developing into

* Howe, Phyllis J. and Osterman, Margaret R.: "Medical Social Service with Glaucoma Patients," *SIGHT-SAVING REVIEW*, Vol. XV, No. 2: Summer, 1945.

larger problems. For example, how can we help them to utilize case work services of existing agencies? Consideration of this and other aspects of the problem has helped to interest us in whether there is a need for a nursery school for visually handicapped children. A committee of about twenty individuals representing health agencies, educational facilities, The Junior League, the sorority whose national project this is, and others, has been appointed and has held one meeting. The major decision at this meeting was to appoint a subcommittee which will make a survey to determine, if possible, whether there are a sufficient number of children requiring this type of care. If not, there is the possibility that partially sighted children might be absorbed in the already existing child care facilities, but, if this were done, it should be handled on a case work or individualized basis.

Since February, we have been working with the camp director of the private family agency on plans to send the partially seeing children to camp. This has led to the setting aside of a two-week period, not only for these children, but for others who are physically restricted, but who could participate in this experience. Arrangements have been made not only to have special camp counselors, but also an adviser. The response from the children and their parents has been gratifying, and fifteen or sixteen children are planning to go.

The project which is of special interest to us now is Sight-Saving Month. October is being designated as such, and everything possible will be done during that period to emphasize the care of the eyes. Last year, one week was devoted to such a project and it was successful enough to warrant an extension of this idea. The basic plan is to include not only the District, but the entire Metropolitan Area.

A committee is being appointed to work out the details. The general procedure is as follows: The chairman of the committee will work out a program in the schools in the county in which she lives and teaches. The plan will be as specific as possible in so far as each department is concerned. For example, the art department could be encouraged to make posters on the subject of eye health, the school nurse could encourage exhibits on eye health, the physical education department might have movies on eyes shown during its

classes, the biology classes could study the structure and function of the eye from an evolutionary standpoint. Another idea might be that the senior high school girls might have a discussion on the subject of professions in this particular field which might be of interest to them. Another phase of the school program might include the showing of the driver testing devices of the American Automobile Association. The plan will be carefully outlined in writing, with particular emphasis on the ideas, such as the dates, the methods to be used, the methods of procedure, timing, and other factors. The understanding is that the chairman, after outlining the plan for her school, will present it to the superintendent of the school for his consideration and then will present it for consideration to the other school systems in the Metropolitan Area, in the hope that they will be interested in following a similar plan.

The same procedure will be followed by the committee member who is responsible for other groups, such as the Health Departments, Citizens' Associations, P.T.A.'s, Labor Unions, and Neighborhood Councils, the Lions Clubs, and others. The month will be concluded with the Annual Meeting which, doubtless, will be a luncheon.

Emphasis will be placed upon the use of all educational materials, such as the films which have already been mentioned, a volunteer Speakers Bureau, distribution of posters, pamphlets, radio programs, and exhibits. A special project is to be worked out between the Social Hygiene Society and this organization. An educational program will be carried on with the service and filling stations in this community. It is hoped that it will be possible to interest the managers of each station to be teachers and that they will endeavor to get each employee to fill out a simple questionnaire on eye health. Included among the questions will be one to bring out the point that the Society has educational material on eye health and that the employee may secure whatever he wishes by so indicating and filling in his name and address.

If time will permit, a two-day institute might be held which would consist of lectures, a showing of the films, exhibits, and other educational materials suitable for the general public.

The question of publicity is important, and one individual will be assigned to this. The District Commissioners will be requested to

designate October officially as Sight-Saving Month. Letters of explanation requesting suggestions for the program will be sent to members of the Society's Advisory Board, as well as to the executives of social agencies. The public utility companies will be requested to print on the enclosures which are usually sent out with the monthly bills, the fact that October is Sight-Saving Month. Included will be the telephone company, the gas company, the power company, and the transit company which will be requested to announce it on the street car passes, and possibly upon posters on the front of the street cars. Since the Community Chest's drive will be scheduled from the 22nd of October on, publicity will stress the fact that the Society is a Chest agency. The red feather will be used wherever possible to convey this idea. Special articles on the Society will be prepared in advance for distribution to the press, shopping news, publicity department of the Council of Social Agencies and the Community Chest.

Inherent in this material are many threads of unity all ending in the general goal of the prevention of blindness and the conservation of vision. Little has been said about the president of the board of trustees of the Society, or of the trustees themselves, or of all those individuals in the community who work together to achieve the main objectives.

In conclusion, may I quote President Conant, of Harvard, (*Atlantic Monthly*, June, 1946) who, in writing of education, says: "Unity is achieved when diverse people with different skills recognize a common set of goals and each in his own way labors to achieve these ends."

Do You Make the Most of Your Eyes?*

Adolph Posner, M.D.

WHAT everyone should know about eyestrain, vision testing, use of glasses, tinted glasses—

MY daily work is divided almost equally between trying to convince some patients that they are sick and trying to convince others that they are not. The latter is the more difficult of the two tasks. Many people believe that a person with normal eyes should not need to wear glasses. They feel that the wearing of glasses constitutes a stigma, an admission of having defective eyes—sick eyes. Nothing is further from the truth. Our vision may be defective—either farsighted, nearsighted or astigmatic—yet our eyes are perfectly normal in structure as well as function; merely the optical apparatus is incorrectly adjusted. Very few people have perfect vision. We cannot expect perfection from our eyes any more than we do from our other organs. And, for ordinary purposes, most of us have eyes which are capable of performing satisfactorily without glasses under average conditions. But the highly advanced state of our civilization demands that our eyes do an amount of work which is entirely out of proportion to what any other organ is called upon to do. The price we pay for it is known as eyestrain. Eyestrain is merely a signal that the eyes have exceeded their working capacity. It is also a signal that you may need glasses. If you have to do an unusual amount of close, exacting work, properly fitted glasses will increase the capacity of your eyes and enable you to do more work with less strain.

Eyestrain

Eyestrain is the symptom, whatever it might be, which brings the patient to the eye doctor. This is not a flippant definition, but a

* Radio talk over Station WNYC, June 3, 1946, under the auspices of the New York Academy of Medicine and the New York Tuberculosis and Health Association, Inc.

statement of actual fact. Some persons will get headaches, others indigestion, still others irritability, nausea, blurring of vision or burning of the eyes. If these symptoms are associated with the use of the eyes, the patient very wisely concludes that he ought to have his eyes examined.

What Constitutes an Eye Examination?

In some parts of the United States, you are still permitted to conduct your own eye examination. You select from the sales counter the glasses which you think suit you best and purchase them—as simple as that. Of course, this is not an adequate examination. It is not even enough for the doctor to fit you with glasses.

A good eye examination begins with an inquiry into the history of the patient's symptoms, the general medical history, the hereditary background, and the type of work the patient is doing. Then, the various parts of the eye are examined in turn—the lids, conjunctivae, pupils, and optic nerves. The tension or hardness is measured to rule out glaucoma, a disease which often gives only vague symptoms in its early stages. The muscles are then tested; and, finally, glasses are fitted.

In dealing with children and young persons, the focusing muscles are often found to be in a state of cramp as a result of the continued eyestrain. These little muscles will not relax as they should when the patient looks at the chart in the distance. In such cases, drops must be used. The drops relax the focusing muscles temporarily; they also dilate the pupils, which may cause annoying dazzle to the patient. Other than this, no harm can ever result from drops, provided that the eyes have been carefully examined to rule out the presence of any disease or sensitivity.

So you see that in a complete eye examination, the eye physician investigates the eye as an organ of the body, containing as it does nerves, blood vessels, mucous membranes and muscles, and not merely as an optical gadget. But eyeglasses can only correct the optical defects which may exist, serving either to sharpen the image on the retina or to relieve the strain produced by focusing. Eyeglasses can neither cure eye diseases nor can they themselves produce any eye disease or blindness, as some people erroneously believe.

The Use of Eyeglasses

When the eye physician prescribes glasses, he takes into consideration not only the optical error, but many other factors, medical, social, and psychological. In nearsighted children, he may want to correct only a part of the nearsightedness, while in farsighted children whose eyes cross, he will want to overcorrect the farsightedness. He will be guided by the type of work the person is doing; whether very close, as for instance a bookkeeper or jeweler, or at an intermediate distance, as a draftsman or a cutter. The psychological approach is a very important one. And here I shall let you in on a little secret. As may be gathered from my previous remarks, I do not feel that the wearing or not wearing of glasses can produce any organic disease of the eyes. Whatever effects are produced are functional—that is eyestrain. Now many people have psychological problems, and they seem very real to the ones who have them. Vanity is not limited to the female sex. I have known many men, from businessmen to army generals, who regard the wearing of glasses as an admission of advancing age, or lack of manliness, or merely as a nuisance. So I find it expedient to act merely as an adviser and to let the patient wear the glasses as much as he finds it necessary for his vision and consistent with his ego. A few days ago, I examined two nearsighted young women in succession. The first one was very myopic. She couldn't even see the largest letter without her glasses. She asked me: "Should I wear the glasses in the street?" I said: "What have you been doing until now?" She answered: "I don't wear them. I can recognize people by their walks, the swing of their bodies, their voices, and the sound of their footsteps." My advice was that she continue as she had been doing. The next young lady, much less myopic than the first one, admitted that even though she would prefer not to wear her glasses in the street, she is obliged to wear them for fear of passing up some acquaintances and being regarded as a snob. She apparently could not substitute her other senses for the sense of sight. She was very happy when I suggested she wear tinted glasses, so she could masquerade as an individual who is sensitive to light. To admit to this condition, though more abnormal than a slight degree of myopia, was less painful to her ego.

I am frequently asked by my patients how often they should have

their glasses changed. My answer is that there is no rule in regard to this. It may not be necessary to change the prescription for several years. But a person who wears glasses should be re-examined at regular intervals, at least once a year.

In prescribing glasses, another factor should be considered which is particularly timely now that the summer is approaching and people will be streaming to the beaches. You may have guessed that I have reference to sensitivity to light. Some people are unduly sensitive to either glare or dazzle, or both.

Glare is the unequal illumination of the surface at which one is looking. It is always uncomfortable to read a book printed on glossy paper, especially if the light is reflected strongly from one portion of the paper, as from a mirror. The eye cannot adapt at the same time to both the brightly illuminated area and to the normally illuminated print. Tinted glasses offer no solution for glare. The best remedy is to adjust the source of light so that the entire field of vision is evenly illuminated.

Dazzle is an excessively brilliant illumination of the retina of the eye, such as by the reflection from snow, sand or a concrete road, in bright sunlight. Some people are more affected by light than others. In some people, it produces actual pain, caused by involuntary spasm of the lid muscles and pupillary muscles. Sometimes this is due to a diet deficient in vitamin A and can be relieved by enriching the diet with vitamin A. In other cases light sensitivity is due to inflammation of the lids which should, of course, be treated. But often there is no visible cause and this condition is spoken of as allergy to light. In all these cases, tinted glasses are definitely indicated.

Tinted Glasses

Tinted glasses should be prescribed by a physician and not selected at random by the patient. Most tinted lenses absorb all or nearly all the ultraviolet rays. These rays are damaging to the outer layers of the eyeball—the conjunctiva and cornea. Ultraviolet rays are absorbed by these outer tissues, so that only a very small portion, if any, reaches the retina. Hence, they are not visible to the human eye. They are the rays which are responsible for sunburn. The green shades of sun glasses are generally preferable to yellow

or blue, since they are least likely to distort color values. Tinted glasses should not be worn indoors, as they reduce the illumination and thus tend to aggravate eyestrain.

I should like to voice one important warning to those who are addicted to the wearing of sun glasses. Do not wear glasses that are too dark. They are likely to cause irreparable damage to your eyes, and here is the reason why. When you wear dark glasses, your eyes are protected from the dazzle of intense sunlight, both direct and reflected. Hence, you feel safe to gaze at the sun or at the bright sand at the beach. However, these glasses absorb only a very small portion of the heat rays, otherwise known as infrared rays. It is these heat rays which, though invisible, penetrate deeply into the eye. Not only this, but the optical system of the eyes acts like a series of burning glasses, focusing all these rays on one small area of the retina. This may cause a partial blindness by actually burning a hole in your retina, just as you could burn a hole in a sheet of paper by holding a strong magnifying glass between it and the sun. This condition is known as "eclipse blindness" and it has been observed from time immemorial in people who watched a solar eclipse through a piece of smoked glass. If you wish to protect your eyes from light and yet avoid this tragic mishap, wear only a light or medium shade of tinted glasses, never a dark shade; and never look directly at the sun.

Summary

In conclusion, let me urge you again: When in doubt, consult an eye physician. He will tell you whether your symptoms are caused by eyestrain. He is best qualified to detect any early disease or abnormality of your eyes, and he will prescribe glasses if they should be necessary.

Dealing with Visual Problems in the Classroom*

Lester R. Wheeler

PRESENTS the school's responsibility in sight conservation
of students.

EVERY year brings increasing requirements for more and more reading. Today the average American reads far more than his parents did, and future demands will make it necessary for our children to increase the amount of their reading from thirty to fifty per cent above present needs. This means that attention must be centered not only upon the teaching techniques which will produce more rapid and efficient reading, but upon the preservation of the eyesight which is being taxed by work it was not designed to do. The reading demands of school and life are straining the eyes to a much greater degree than parents and teachers realize. In order to save a child's eyes and maintain efficient vision, it is of the utmost importance that the classroom teacher give more attention to the conservation of her pupils' vision.

A number of visual handicaps can be prevented or helped if the teacher practices the rules of visual hygiene in her classroom and becomes familiar with the symptoms of various types of visual defects. Without adequate consideration of the importance of protecting the eyesight, every child is in danger of becoming the victim of impaired vision. In addition, Baker(4) and others maintain that about twenty per cent of our school children have a major or minor visual defect; of these, 19.75 per cent can be corrected, .2 per cent can be partially corrected, and a small number (.05 per cent) will become totally blind. This indicates that, in addition to every child facing the possibility of dangerous eyestrain and preventable

* Reprinted with permission from *The Elementary English Review*, October, 1945.

disorders, there is a large number of children who have borderline visual problems which may not show up on the routine school visual check-ups but may retard reading and seriously affect school progress. It is necessary that every teacher be on the alert to detect these difficulties and to know how to deal with them.

Few teachers realize that the child must be taught how to see before he can be taught how to read. When the child enters school he has already learned to use his eyes in various ways. He can see equally well by moving his eyes up or down, right to left or left to right, or by using them in oblique movements either up or down from right to left or left to right. Although the child sees six to eight different ways, he must learn to read from left to right and back to the left on the line below. There are twelve major muscles which must be trained to habitually move the eyes in the directions required by the process of reading. A great amount of fatigue develops in these muscles as the eyes start and stop from four to nine thousand times in an hour of reading, compared with the two to three thousand movements they were designed to make in the more primitive, outdoor existence of the human race.* The amount of fatigue is greater among young children, and especially among poor readers. Near point or reading distance is much more fatiguing than far point vision. Teachers can make use of distance vision much more than they do to rest the children's eyes and reduce visual fatigue. The child often blinks his eyes in order to relax them from a fatiguing task of reading or close work. Because of visual fatigue children are often inattentive and nervous in the classroom.

About eighty to ninety per cent of the children are farsighted when they enter school—a fact overlooked by most teachers. Most of the visual tests used in the schools do not detect the farsightedness which causes much fatigue and poor reading in the early grades. Because these children lack the visual maturity required for beginning to read, they often become reading problems. Many of the serious reading difficulties found in the upper grades are directly traceable to retarded visual readiness. Early detection and correction of farsightedness is very essential for the success of the primary reading program. The teacher is not supposed to do the corrective work, but it is paramount that she discover such cases and solicit

* See Luckiesh and Moss (21), p. 510, and Terman (29), p. 241.

the parents' cooperation in getting a competent and well trained eye specialist to examine the child and make corrections.

Many visual difficulties are picked up through the various vision screening tests used in the schools. With the Snellen chart and its modifications, the Betts Ophthalmic Telebinocular and the Eames Eye Test, visual problems which affect the child's reading may be discovered, such as:

1. Distance fusion, or the ability to focus the eyes at a distance.
2. Visual efficiency—keenness of vision.
3. Vertical imbalance—the degree of deviation of the eye upward or downward.
4. Coordination level, or power of coordination.
5. Lateral imbalance—the degree to which the eyes turn in or out, or remain parallel at reading and far point distance.
6. Reading distance fusion—the ability to focus the eyes at reading distance.
7. Sharpness of image—astigmatism or accommodative convergence.

These tests can be administered by the teacher, nurse, or health department with fairly accurate results. However, such tests should never relieve the teacher of a constant watch for symptoms of visual fatigue and other difficulties which may develop from day to day among her pupils. The results of the vision screening tests should be supplemented by the observations of the classroom teacher made during the children's working days at school. The sympathetic and cooperative teacher also helps both the children and tester at the time of the screening tests. By pointing out the symptoms she has observed, special attention during the screening may increase the efficiency of the tests.

Every teacher should be familiar with the common visual defects and recognize the symptoms of each. This is essential for effective teaching because visual difficulties materially affect reading and general school progress. The following score sheet will help the teacher discover symptoms of poor vision among her pupils.

Symptoms of Visual Difficulties

Directions: Observe the child's reading and check (✓) any of the following symptoms of poor vision. If the child has several of the symptoms, recommend that the parents have the child examined by an eye specialist.

I. Symptoms Based on Behavior

- 1. Child rubs eyes frequently.
- 2. Child tries to brush away the blur.
- 3. Child has difficulty seeing clearly what is on the chalkboard.
- 4. Holds the book close to the eyes while reading.
- 5. Holds head close to the desk while reading or working.
- 6. Tilts head forward when looking at objects.
- 7. Child holds head to one side while reading or studying.
- 8. Child shows symptoms of pain in and about the eyes.
- 9. Frowning when reading or looking at pictures in a book at reading distance.
- 10. Eyes become tired quickly while reading or studying.
- 11. Child closes one eye while reading or doing close work.
- 12. Child lacks persistence while reading.
- 13. Inattention and symptoms of fatigue while reading.
- 14. Shows a general nervous tension while reading.
- 15. Nervous depression, caused by eye fatigue.
- 16. Allergic disturbances, sometimes symptoms of visual defects.
- 17. Picking up words below and above the line.
- 18. Child is unable to stay on the line and begin on the line below.
- 19. Child often squints while reading.
- 20. Frequent eye blinks indicate eye fatigue.
- 21. Eyes are oversensitive to light.
- 22. Lack of fusion, or the inability of eyes to work together.
- 23. The child's reading becomes poorer the longer he reads.
- 24. Poor alignment in penmanship is sometimes an indication of poor vision.
- 25. Child frequently changes the distance of the book while he is reading.
- 26. Confusion in reading and spelling o's and a's, o's and c's, n's and m's, etc.
- 27. Child often stumbles or trips over objects while playing or walking.
- 28. Child is irritable while doing close work in the school or at home.
- 29. Has difficulty in playing baseball or similar games.
- 30. Difficulty in school work requiring close use of eyes.

II. Symptoms Based on Appearance

- 1. Child's eyes often water while reading.
- 2. Discharges frequently given off from the eyes.
- 3. Repeated sties.
- 4. The lids of the eyes are often red, encrusted or swollen.
- 5. One eye has a tendency to turn inward or outward when tired.
- 6. Unusual redness occurs in the white portions of the eyes.
- 7. The eyes have a tendency to turn upward or downward.
- 8. One eye has a tendency to turn upward or downward.
- 9. Eyes often vibrate or tremble.
- 10. The pupil in one eye is definitely larger than the pupil in the other eye.
- 11. Frowning, or wrinkling of the forehead.
- 12. Eyes have a tendency to swell during the afternoon.

III. Symptoms Based on Complaints of the Child

- 1. Pain in the forehead or temples.
- 2. Headache during the afternoons.
- 3. Child often becomes dizzy or sick while riding in an automobile, train, or on a bicycle.
- 4. Child is unusually tired after the movies.
- 5. Child often has gastro-intestinal disturbances or constipation.
- 6. Child has a definite dislike for reading and general close work.
- 7. Pains in back of head and neck.
- 8. Blurred vision.
- 9. Dizziness or nausea, following close eye work.

There are many ways the classroom teacher can help in preventing the development of visual problems among her children, and she can also materially assist those who are visually handicapped by constantly observing the rules of visual hygiene. The teacher who develops a sensitive vision conscience about her classroom will be contributing a generous part toward the future health and happiness of her pupils. The following are some suggestions for the prevention and correction of visual difficulties. If teachers will check this list, they can find out how well they are safeguarding the vision of their children.

Suggestions for Helping Children Preserve Their Eyesight

1. If school health examination shows the child has defective vision, have child examined by a competent eye specialist.
2. Do not rely entirely upon routine health examinations to pick out the children with defective vision. Many minor defects which do not show up in these check-ups may seriously handicap the child in his school work.
3. If you detect symptoms of eyestrain and visual defects in the child, urge parents to take child to an eye specialist for a thorough check-up.
4. Close cooperation of the parents and teachers is needed in supervising and carrying out the recommendations of the eye specialist.
5. If glasses are provided, see that child constantly wears them as recommended.
6. See that glasses are kept clean.
7. See that child wears his glasses properly, looking through the center of the lens at all times.
8. Instruct child in the proper care of his glasses, such as cleaning and keeping frames in shape.
9. If child is wearing glasses, check to see how recently he has had a re-examination and adjustments. The child's eye is a developing eye, and glasses should be changed occasionally.
10. Constantly watch all children for symptoms of eye fatigue or visual defects.
11. All children recuperating from illnesses should refrain from using their eyes in close work for long periods at a time.
12. Teach all children habits of economy in the use of the eyes.
13. Teach child to rest eyes by looking away from the book frequently.
14. Limit the periods of time requiring short distance focusing of the eyes.
15. Alternate desk work with chalkboard work, or other methods. A change of focus is considered an eye rest period.
16. Have child rest eyes frequently by closing eyes, or putting head down on desk.
17. When eyes tire, have child stop work and bathe eyes and face with cold water.

18. Have someone read lessons to the visual problem child, especially in the upper grades where assignments are long.
19. Plan work so the child's schedule is based on eye work followed by rest periods.
20. Teach through activity programs as much as possible. This enables the child to change from one type of work to another whenever he becomes tired.
21. Adjust seats and desks so that the work may be comfortably placed at least 12-15 inches from the eyes.
22. Adjust seats and desks so that the light will shine on the child's work, not in his eyes.
23. Whenever possible use a movable, adjustable, tilt-top desk.
24. If desk top is flat, use a copy holder to elevate and tilt books, and a tilted drawing board for resting working materials on eye level.
25. Child should sit erect and bring his work up to the necessary level for seeing. Poor posture may be both a cause and a result of defective vision.
26. Seat the child where the light is good. Light should come from over the left shoulder except in cases of left-handedness.
27. Reserve the most favorable seats in the classroom for the children with visual difficulties.
28. Child should not sit facing the light.
29. See that there are no glaring surfaces within the child's line of vision.
30. Spots and streaks of direct sunlight should be avoided.
31. The light in the room should amount to ten foot-candles at the darkest corner of the room, and from twenty-five to forty at the side of the reader.
32. The window space should be approximately one-fourth of the floor space, in order to give adequate light.
33. The ceiling should be almost white and the walls, light buff. Soiled or dark walls decrease the light some twenty-five per cent.
34. Proper lighting should be provided both in the classroom and in the home.
35. When illuminating chalkboards, charts, etc., prevent glare by placing light to one side of the object rather than close to the object in the direct line of vision.

36. Glare may be minimized by having the surroundings of approximately the same brightness as the light on the book or other work materials.
37. Whenever possible provide indirect or semi-direct lighting in the home or school as the most effective way to eliminate glare.
38. Make certain all children are seated so that all chalkboard work, charts, demonstrations and other visual aids to learning are easily visible.
39. All writing on chalkboards should be large, preferably in manuscript.
40. Use soft chalk on clean chalkboards.
41. For mimeographed materials and the like, use a bulletin typewriter with upper and lower case letters, or a sight-saving typewriter.
42. Provide child with unglazed paper, preferably of an eggshell color.
43. Have child use a soft lead pencil, or a pen with a broad writing point.
44. In art, child should work in the large. Avoid pencil or ink drawings.
45. Teach child to avoid small, cramped handwriting. Writing should be large and oval.
46. See that child is provided with large type books and materials. Eighteen-or-24 point type materials are usually available from the nearest center having a sight-saving class, or from local or county library.
47. Lines in school books should be short, about three inches, and margins should be wide.
48. Schoolbooks should be of white paper, without gloss.
49. Books should be generously illustrated.
50. In the primary grades chalkboards and big charts should largely replace book and pencil.
51. The school should prohibit the child with impaired vision from such courses as sewing, mechanical drawing, laboratory work with the microscope, and excessive library reading.
52. Prohibit excessive or unnecessary reading and close work.
53. Reduce the amount of instruction through the use of the eye, and give more time to teaching through the ear and through motor activities.

54. If condition of eyes of the child is such that sight is likely to deteriorate gravely or be lost, education should be specially planned to prepare him for this contingency.
55. On leaving school, children with defective vision should have vocational advice as to trades and professions that are least taxing upon vision.
56. Teachers should be active in enlisting the cooperative efforts of the parents, school, civic clubs, the medical profession, and eye specialist in studying children's visual problems.
57. P. T. A. and other instructional programs should be arranged, stressing the academic and hygienic significance of visual defects and sight-saving.
58. Remember that the eye of every child is an undeveloped eye, and that for this reason it should always be protected from overwork.

As we progress in education the classroom teacher is called upon to assume a greater part in teaching and developing the whole child. Each teacher should constantly strive to do everything that she possibly can to make her instruction more effective. Poor vision is one of the many problems which materially handicap normal progress in reading and other subjects. The purpose of these suggestions is to give the classroom teacher assistance in discovering, preventing, and correcting the visual defects which materially hinder a child in learning to read and in reading to learn.

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Note and Comment

National Society's Conference, November 25-27.—Plans for the National Society's Annual Conference, to be held at the Hotel Pennsylvania, New York, November 25 to 27, inclusive, are taking shape. The tentative program is herewith outlined:

MONDAY, NOVEMBER 25, 1946

9.30 A. M. to 12 Noon. The Vision Program in Industry

1. Is Industry Measuring Up to Modern Standards of Eye Health and Protection?
2. Panel on Professional Guidance in the Plant Program:
(a) Medical; (b) Ophthalmologic; (c) Optometric; (d) Optical; (e) Nursing

12.30 P. M. to 2.30 P. M. Get-together Luncheon

Increasing the Opportunities for Sighted Workers with Visual Handicaps

2.45 P. M. to 4.30 P. M. Developmental Eye Conditions in Children

1. Congenital and Hereditary
2. Retrolental Fibroplasia
3. Congenital Cataract Associated with German Measles
Open Discussion

TUESDAY, NOVEMBER 26, 1946

9.30 A. M. to 12 Noon. Medical Advances in Restoring and Conserving Vision

1. Corneal Transplant
2. Use of Sulfa Drugs
3. Use of Penicillin
Open Discussion

2 P. M. to 4. P. M. Panel on Glaucoma

4.15 P. M. to 5.30 P. M. Film Showings

6.30 P. M. Annual Business Meeting

7 P. M. Conference Dinner (Informal)
International Health Problems

WEDNESDAY, NOVEMBER 27, 1946

9.30 A. M. to 12 Noon. Meeting the Need for Professional Personnel in Sight Conservation

1. Nurses
2. Medical Social Workers
3. Teachers

12.30 P. M. to 2.30 P. M. Luncheon Meeting
New Light on Lighting

The complete program, including the names of speakers, will be included in an early issue of the *Eye Health and Safety News*, copies of which will be sent to SIGHT-SAVING REVIEW subscribers. In the meantime, it is hoped that note will be made of the dates, time and place of meetings, and that reservations for the luncheons and dinner will be sent to the Society's offices well in advance of the Conference.

New Chemical May Help Glaucoma.—A new therapeutic agent called DFP (di-isopropyl fluorophosphate) was discussed at the recent session of the Federation of American Societies for Experimental Biology at Atlantic City. Scientists from the Chemical Warfare Service at Edgewood Arsenal as well as investigators from collaborating institutions reported that this compound, by inhibiting the activity of the enzyme cholinesterase, which causes glaucoma, produced prolonged miosis with a decrease in intraocular tension from 4 to 8 days and was frequently more effective than pilocarpine or physostigmine. Of 76 patients with glaucoma, 16 were not helped; 25 obtained the same results as with the two medications commonly used for this condition; and 36 were helped by DFP where other medicines had failed. However, these preliminary results do not permit a conclusion at this time, since DFP has several undesirable effects associated with its use—blurring of eyesight, eyeache, spasm of accommodation and pericorneal vasodilation.

Chicago Branch of Eye-Bank.—Marking its first anniversary, The Eye-Bank for Sight Restoration, Inc., New York, N. Y., announced the establishment of its first branch bank, to be located in Chicago. It is to be known as The Eye-Bank for Sight Restoration, Inc., Chicago Branch. The initial plan of setting up the new bank so that eye tissue could be made available for the special operation of corneal grafting was approved by the Chicago Ophthalmological Society on March 18. The Society's president, Dr. Peter C. Kronfeld, head of the Eye Department of the Illinois Eye and Ear Infirmary, then appointed a Board of Directors consisting of himself and the heads of Eye Departments from the following Chicago institutions: The University of Chicago Medical School, the University of Illinois Medical School, Loyola University Medical School, and Northwestern University Medical School. They, in turn, chose Dr. Kronfeld as chairman.

The Board asked the Cook County General Hospital for space in which to locate the new bank. That institution has complied, and it is hoped that the branch bank will be fully established and functioning shortly.

The Chicago Branch, which is under the general direction of the Eye-Bank for Sight Restoration, Inc., in New York, will act as a way station for the reception and distribution of eyes throughout the Chicago area. After local needs are filled, surplus tissue will be sent to the New York bank for distribution there.

In reviewing the year's activities of the Eye-Bank, Mrs. Henry Breckinridge, executive director of the parent organization, revealed that, to date, more than 85 affiliated hospitals throughout the nation are participating in its program. Since the opening of the Eye-Bank, the Red Cross, through the services of its Motor Corps Division, and the airlines have volunteered their services in transporting eyes to and from hospitals, and to and from the Bank. Eyes have been flown from Miami to New York, from New York to Cleveland, and to Duke University in North Carolina, and to and from hospitals and doctors throughout the Eastern seaboard.

Recently, three soldiers at the Valley Forge General Hospital in Phoenixville, Pa., have had the corneal grafting operation performed with eye tissue supplied by the Eye-Bank.

More than 3,000 letters of inquiry have been received from blind

persons in 18 nations including the United States in the past year, and each one has been answered personally. The patient is advised to consult his local ophthalmologist as to whether a corneal transplant would benefit him, and when it is the decision of the ophthalmologist that such an operation is indicated, the services of the Eye-Bank are made available.

Reading Clinic.—Announcement has been received of the annual seminar of reading disabilities at Temple University, Philadelphia 22, Pennsylvania. The course, which is of interest to classroom teachers, remedial teachers, psychologists, supervisors, administrators, neurologists and vision specialists, is given through the Department of Psychology. For programs and registration information, write to Dr. Emmett A. Betts, Director.

Goggles for Eyeballs.—Dr. Charles Sheard and Dr. E. H. Lambert of the Mayo Clinic reported at a recent meeting of the Optical Society of America, that visual blackout in aviators during sharp turns or dive pull-outs at high speed is due to temporary anemia of the eyeballs and can be prevented by suction applied to the eyeballs through the use of special goggles.

Demand for Eye Health Publication Swamps Society.—Since the publication several months ago of *Eye Health—A Teaching Handbook for Nurses*, the National Society for the Prevention of Blindness has been deluged with orders, requiring an early publication of a second printing. To date, approximately 1,500 copies have been requested.

Sight-Saving Associations Meet.—After a lapse of several years, the Ohio Sight-Saving Association met in Columbus, in May, to resume the exchange of experiences and ideas of those engaged in the education of the partially seeing. Despite a severe storm, 66 of 72 teachers of the partially seeing in the state attended. Mrs. Mary Kuntz of Newark, Ohio, as chairman, brought the members up to date on events, and Miss Olive S. Peck of Cleveland gave a résumé of the efforts to obtain material in large type. The principal speaker of the morning session, Dr. Claude S. Perry of Columbus, who had recently returned from military service, pre-

sented the subject of "Eye Difficulties of Children in Classes for the Partially Seeing." The speaker for the luncheon meeting was Mrs. Winifred Hathaway, Associate Director of the National Society for the Prevention of Blindness, who described the past, present, and future of classes for the partially seeing.

Reporting on the reunion of the Massachusetts Sight Conservation Society, Miss Gladys Brock, Secretary, indicates a lively interest on the part of its members. The subject of memberships was taken up and it was agreed that, according to the by-laws of the Society, all active, associate, and honorary members were considered members unless a letter of withdrawal had been sent. Miss Florence Eliason is President of the group.

The Treacher Collins Prize Essay.—The Council of the Ophthalmological Society of the United Kingdom has instituted a prize of £100, to be known as the Treacher Collins Prize, to be awarded triennially for the best essay submitted upon a subject selected by the Council. The prize is open to qualified medical practitioners of any nationality, and it is specified that the essay shall be written in the English language. The subject for the next award of the prize is "Nutritional Eye Disease." The closing date for sending in essays for this award is December 31, 1947. Essays should be submitted to the Honorary Secretary, Ophthalmological Society of the United Kingdom, 5 Racquet Court, Fleet Street, London, E.C.4, from whom also any further particulars can be obtained. No name should appear on any essay but a distinguishing pseudonym or quotation, which should also appear upon a sealed envelope containing the candidate's name and address. This envelope should accompany the essay.

Annual Industrial Health Congress.—New procedures, technics and policies developed in the field of industrial medicine during the war years will be discussed at the seventh annual Congress on Industrial Health which will be held at the Hotel Copley Plaza in Boston, September 30 to October 2. Registration for the three-day meeting is expected to exceed 800.

The program is being arranged by Drs. Carl M. Peterson and Harold R. Hennessy of the Council on Industrial Health of the American Medical Association, which is sponsoring the congress.

One day will be devoted to a conference on lead poisoning. Eight different speakers will cover the subject which will be summarized by Dr. Robert A. Kehoe, of the University of Cincinnati College of Medicine, Cincinnati.

The annual dinner and conference of state medical society committees on industrial health will be held on Monday evening.

Maurice J. Tobin, Governor of Massachusetts, will welcome the delegates at the general session, which opens Tuesday. Among the subjects to be considered that day will be new horizons in industrial health and welfare; conserving the health of management; experiments in small plant medical service; nutrition and capacity for work; industrial pulmonary and heart diseases and work capacity in industry.

Wednesday morning's program was arranged with the Council on Pharmacy and Chemistry and the Council on Physical Medicine of the American Medical Association. Three speakers will touch on the effects of atomic energy in industry.

Wednesday afternoon's program is entitled "Symposium on Fitness for Work—a Program for Industry, Labor and Medicine." Speakers will include Dr. Morris Fishbein, Chicago, editor of *The Journal of the American Medical Association*; Col. Richard H. Eanes, Medical Director, Selective Service System, Washington, and Dr. Dean F. Smiley, of the Bureau of Health Education, American Medical Association, Chicago.

Victor Adopts Vision Program.—In cooperation with the Illinois Society for the Prevention of Blindness, the Victor Adding Machine Company of Chicago instituted a comprehensive program of eye safety which reduced eye injuries 100 per cent and raised visual efficiency from 74 per cent to 97 per cent.

Visual acuity tests by the Illinois Society revealed that poor eyesight was responsible for poor workmanship in several cases. Among the other aspects of the safety program were functional use of color; job evaluation; safety guards on machines; expansion of the goggle program to include examination by a competent optometrist, as well as goggle cleansing stations; the establishment of a six months' rotating safety committee; and the purchase of the National Society's film, *The Eyes Have It*.

James Watson White, M.D.—Workers in sight conservation have lost an outstanding colleague in the death of Dr. James Watson White, noted authority on the subject of eye muscles. His cheerful mien and generous advice will long be missed by the thousands of medical as well as other professional students who had the privilege of meeting him and studying with him.

British Faculty of Ophthalmologists Formed.—Word has been received that the Association of British Ophthalmologists has been dissolved and is being replaced by the Faculty of Ophthalmologists, 45 Lincoln's Inn Fields, London, W.C.2.

Shipyards and Dock Injuries.—A monthly report, issued by the United States Compensation Commission, claims that in 2,195 accidents involving flying and swinging objects, eye injuries predominated. While none of these accidents was fatal, their occurrence points up the necessity for greater safety education. Eyesight in industry is a subject that is steadily growing in importance, but one of the serious brakes on its progress is the worker himself, who fails to cooperate by refusing to wear protective goggles.

Former Board Member Dies.—The National Society regrets to report the death of Dr. Albert B. Meredith, for some time a member of its Board of Directors. Dr. Meredith was active in the educational field from 1895, and from 1941 to 1943 was coordinator of civilian defense training programs for the State Education Department. Because of pressure of immediate duties, Dr. Meredith resigned as Board member some time ago, but his services to the Society remain a lasting memorial.

Welders' Goggles Lenses.—Because all safety lenses are made to the same prescription they can be mass produced. However, The American Industrial Safety Equipment Company, in Brooklyn, N. Y., insists that each piece of work receive individual attention. Only the most perfect, specially made glass can be used. Ordinary glass with its "waves" would be fatal to the eyes. Accurate inspection is necessary and defective plates are immediately discarded. With testing experts as supervisors, federal specifications are met. In addition to the ordinary tests for all precision ground

lenses for clarity of vision, the lenses are tested for transmission of ultra-violet and infra-red rays. With these safeguards against the incredible amounts of light intensities generated by oxyacetylene flames and electric arcs, the eyes of the worker are well protected. However, eye accidents continue because workers are not impressed with safety training.

New York Society for Clinical Ophthalmology Elects.—The new officers of the New York Society for Clinical Ophthalmology are: Benjamin Friedman, President; Daniel Kravitz, Vice-President; Bernard Kronenberg, Recording Secretary; Benjamin Esterman, Corresponding Secretary; Leon Ehrlich, Treasurer.

"Lectures on Motor Anomalies" in Third Printing.—Alfred Bielschowsky's "Lectures on Motor Anomalies" is now on sale at Dartmouth College Publications, Hanover, New Hampshire, at \$1.50 per copy, postpaid.

Current Articles of Interest

Malaria Therapy in Syphilitic Primary Optic Atrophy, Walter L. Bruetsch, M.D., *Journal of the American Medical Association*, January 5, 1946, published weekly by the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

From a fifteen-year microscopic study of the visual pathways of 70 patients with all types of syphilis of the central nervous system, it is evident to the author that primary syphilitic optic atrophy is due to a chronic inflammatory process, followed by degeneration of the nerve fibers. These findings uphold the anatomic studies of previous investigators. Upon instituting malaria therapy, it is observed that this chronic inflammation is inhibited and the damage to the nerve fibers is halted. Since the inflammatory process advances from the periphery toward the interior, enough normal tissue of the central portion of the nerve is left for useful vision. However, in many cases, malaria therapy is ineffective; but, while vision may continue to fail for three years following malaria therapy, no additional loss of vision is noted after that time. In favorable cases, there is a slowing up of the process and the concentric constriction gradually expands with evident recovery of the partially damaged nerve fibers.

If visual failure continues after one course of malaria, an immunity has developed to the tertian strain and quartran malaria should be used. Surgical intervention is not recommended, since removal of the fibrosed and infiltrated arachnoid does not inhibit the inflammatory process within the optic nerves. There is no therapeutic response to routine anti-syphilitic treatment with arsenicals, heavy metal and iodides; it is the author's conclusion, therefore, that when a diagnosis of syphilitic primary optic atrophy is established, malaria therapy should be instituted at once.

Corneal Transplantation and Nursing Care, Harriet B. Wright, R.N., *The American Journal of Nursing*, January, 1946, published monthly by The American Journal of Nursing Company, 1790 Broadway, New York 19, N. Y.

Orienting the patient is an important aspect of preoperative and

postoperative care, which the author describes in detail. Since the patient must limit the use of the facial muscles, a complete diet is included, as well as instructions advising against the use of a toothbrush and suggesting a mouth wash through a tube, and applicators, for satisfactory mouth care.

The Ocular Complications of Leprosy, Jose Mendonca de Barros, M.D., *American Journal of Ophthalmology*, February, 1946, published monthly by the Ophthalmic Publishing Company, 837 Carew Tower, Cincinnati, Ohio.

Leprosy has a higher percentage of ocular involvement than any other systemic infection, with the lepromatous lesions having a predilection for the ciliary margin which becomes a rich source of bacilli, with infiltration into the conjunctiva, episclera and sclera, cornea, and iris. The author observed 1,279 cases and found no involvement of the posterior-segment; he advances the theory that ocular complications are restricted to the anterior-segment with the cornea usually involved; all other conditions arising from or being present in conjunction with corneal disease.

Temporary Cataracts in Diabetes, R. D. Lawrence, M.D., F.R.C.P., *British Journal of Ophthalmology*, February, 1946, published monthly by the British Journal of Ophthalmology, Ltd., 24-27 Thayer Street, London, W.1, England.

In cases of temporary cataract in diabetes, reported by others, cataracts developed in untreated cases of diabetes and cleared up under treatment. However, the author reports the first known cases in which cataracts both developed and cleared up during treatment of diabetes. In his cases (two), no lens opacities were observed when the patients were first seen. The author concludes: "But as these cataracts can be brought on both by bad diabetes and by its treatment, the only common causal factor this suggests to me is *change in hydration*, both dehydration in progressively increasing diabetes and rehydration under treatment."

An Analysis of Professional Eye Care and Industrial Efficiency, Newell C. Kephart, Ph.D., *Transactions American Academy of Ophthalmology and Otolaryngology*, March-April, 1946, published bi-monthly by the American Academy of Ophthalmology and Otolaryngology, 100 First Avenue Building, Rochester, Minnesota.

Of 45 hosiery pairers tested for visual efficiency and retested one year later, it was revealed that visual standards remain stationary for this job; and where professional eye care was required and obtained, there was definite improvement in visual skills with an attendant increase in earning rate.

The Problem of Diabetes in Ophthalmology, Dr. Jose Luis G. Arce, *Boletin del Hospital Oftalmologico de Nuestra Senora de la Luz*, September-December, 1945, published bi-monthly by Organo de la Sociedad de Oftalmologia del "Hospital de Nuestra Sra. de la Luz," Ezequiel Montes, 135, Mexico, D.F.

The author reviews the conditions in the eye directly resulting from diabetes and deals with the diabetic patient in need of ocular surgery.

Ocular Leprosy in Ophthalmology, R. D. Harley, Lt. Col. (MC), A.U.S., *American Journal of Ophthalmology*, March, 1946, published monthly by the Ophthalmic Publishing Company, 837 Carew Tower, Cincinnati, Ohio.

Of all the organs involved in leprosy, the ocular lesions appear to cause more complaints than any other. In the series of 150 cases studied at the leprosarium in Panama, the number of eyes examined was 298. About 13 per cent of the patients were totally blind in one or both eyes; 41 per cent had vision of 20/200 or less in one or both eyes (not correctable); 43 per cent had normal vision in both eyes; and 10 per cent had normal vision in one eye. However, the normal vision had no bearing on the pathologic change noted in the slit-lamp observation.

Treatment is difficult to evaluate, since there are periods of remission when the patient feels his eyes and sight have improved. The general attitude of the patient is one of resignation with an apathy toward drugs. However, there is an intense desire to cooperate with the physician when he manifests a genuine interest in their condition.

Prophylaxis through protection with dark glasses or goggles should be emphasized and therapy is confined to palliative measures. Where surgery is indicated, it produces gratifying results, with no postoperative infections, the leprous eye being peculiarly immune to the ordinary organisms.

Chinese Native Ophthalmology, Otis S. Lee, Jr., M.D., *Journal of Iowa State Medical Society*, March, 1946, published monthly by the Iowa State Medical Society, Des Moines, Iowa.

In this brief historical sketch, the author surveys the contributions the Chinese made to ophthalmology, from the first reliable source of information in 250 B.C. to the last dynasty before the present Chinese Republic. It is interesting to note their progress, especially when their study of medicine is based on the theory of cosmogony, with the study of anatomy being limited because of religious ideas and philosophic deductions, the gaps in the study being filled in by this theory.

There is evidence of the influence of Indian medicine in 618 A.D. and Western ophthalmology in 1840. Ophthalmic surgery in China has not been extensive because eye diseases were considered to be the result of diseases of the internal organs and emphasis was therefore on internal medicine. While the Chinese are credited with being the earliest users of spectacle lenses, the early Chinese writings do not mention them, so it may be concluded that they were not developed there, but rather introduced from the West.

Preglaucoma, Harry S. Gradle, M.D., *American Journal of Ophthalmology*, May, 1946, published monthly by the Ophthalmic Publishing Company, 837 Carew Tower, Cincinnati, Ohio.

Two types of ocular hypertension can be anticipated from the preglaucomatous eye and it is important that this differentiation be established before further investigation is instituted. If the ophthalmologist is dealing with a preglaucomatous condition of the acute type, he must ward off an acute attack of glaucoma, and preventive surgery may have to be employed. In the case of the chronic type, he must retard the development of a chronic compensated glaucoma. In both cases, the patient must be impressed with the danger involved in using too strong a miotic too frequently.

Since the type of preventive treatment varies as well as the visual prognosis for the patient, it should be emphasized that careful, clinical study is the first consideration.

Effect of Talc in Ocular Surgery, Max Chamlin, M.D., *Archives of Ophthalmology*, November-December, 1945, published monthly by the American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

Various investigators in the field have reported fairly uniform results in determining the effect of the accidental introduction of talc from surgical gloves on tissues. Since there were no comparable studies reported for the eye, the author was prompted to investigate. In his experiments with rabbits, talc was demonstrated to produce granulomas. It is not significant to evaluate the amount of talc that could get into the tissues in the process of the ordinary operation, but rather to avoid the possibility of any getting into the exposed area.

A Survey of the Ophthalmic Status of the Cree Indians at Norway House, Manitoba, Wing Commander John V. V. Nicholls, *The Canadian Medical Association Journal*, April, 1946, published monthly by The Canadian Medical Association, 3640 University Street, Montreal, Quebec, Canada.

The incidence of ocular disease among Indians is high as compared with conditions in the average white colony. But while trachoma is common among Indians in other parts of Canada, none was found in this survey. The Indians have basically good eyes and vision, but as age increases, probably due to their standard of living and exposure to the hazards of the trap line, this visual advantage is lost.

Ocular Symptoms and Signs Associated with Deficiency of Vitamin B Complex, A. S. Fernando, M.D., C. D. Ayuyao, M.D., and J. N. Cruz, M.D., *The Journal of the Philippine Medical Association*, March, 1946, published monthly by the Philippine Medical Association, 547 Herran Street, Manila, P. I.

The outbreak of an epidemic of nutritional eye disease, associated with multiple vitamin deficiencies, is reported here. Retrobulbar neuritis, corneal lesion, and a combination of both were the diagnoses in 590 cases treated in the Free Dispensary of the Philippine General Hospital. Associated signs and symptoms of vitamin B complex deficiency were observed in many patients. Prompt response was noted when a well-balanced diet was supplied, whereas withdrawal of this diet produced a relapse. Because the lack of proper nutrition was the direct result of the outbreak of the war, it should be emphasized that future epidemics can be avoided if a well-balanced diet, within reach of the economic level of the masses, is recommended to the general public.

Ocular Gnathostomiasis, K. Sen and N. Ghose, *The British Journal of Ophthalmology*, December, 1945, published monthly by the British Journal of Ophthalmology, Ltd., 24-27 Thayer Street, London, W.1, England.

This is probably the first case of gnathostoma in the human eye to be reported. Parasites in the human eye are rare and human infection with gnathostoma is very rare. Without the discovery of the worm, the condition did not conform to any known clinical category. The symptoms were pain and swelling of the face, followed by orbital cellulitis and vitreous and retinal hemorrhages. Several attacks of iritis developed, accompanied by the appearance of a pigmented nodule on the iris, which during the last attack was found to be a worm. The worm was removed at operation, and while the eye made an uneventful recovery, there was some optic atrophy. The incision used to remove the worm is effective for removing a cyst or a non-magnetic foreign body from the angle of the anterior chamber.

A Case of Sjögren's Syndrome, Treated Successfully with Per-andren, R. Brückner, M.D., *Ophthalmologica*, July-August, 1945, published bi-monthly at Halbeinstrasse 22, Basel, Switzerland.

Because this syndrome occurs more frequently in women who are beyond the age of menopause, it was assumed that it was due to a hormonal disturbance involving the ovaries. Keratoconjunctivitis being one of the typical symptoms, it was noted that the corneal lesion cleared up within 8 weeks after onset of treatment. The hormone had been administered in the form of a linguette, nightly, for several weeks and resorption took place in the oral mucosa. After the symptoms had cleared up, it was continued once or twice a week, with a relapse occurring when it was discontinued for more than one week.

The Inverted Gunn Phenomenon, L. Halpern, M.D., *Acta Medica Orientalia*, published monthly by The Palestine and Near East Medical Journal, P.O.B. 3011, Tel-Aviv, Palestine.

The prevalent explanation of the Gunn phenomenon, which is the raising of a ptotic eyelid with every voluntary movement of the jaw, is the formation of an abnormal interconnection between the nuclei of the motor branch of the trigeminus and the oculomotor

nerve, or that an anastomosis has been created between those two nerves in their peripheral parts.

The author describes an inverted Gunn phenomenon, which is the closing of the eyelid with every voluntary movement of the jaw. However, he disagrees with the explanation of the phenomenon, first assuming that the inverted has the same explanation as the original, and concludes that it is a purely biogenetic functional mechanism.

Primary Familial Dysplasia of the Crystalline Lens, M. Gruber, M.D., *Ophthalmologica*, July-August, 1945, published bi-monthly at Halbeinstrasse 22, Basel, Switzerland.

The author reports four cases of bilateral membranous cataract occurring in two generations of a family having a dominant hereditary tendency to cataract. There were no signs of an inflammatory or traumatic cause of this process, so it was assumed that the condition was caused by an intra-uterine factor, which led to partial or total absorption of the lens.

Surgical intervention is not advised because needling fails due to the tough membrane, and the poor development of the vitreous body does not favor total extraction, as there is danger of consequent complications.

The Fate of Corneal Grafts, Jean Babel, M.D., *Ophthalmologica*, January, 1945, published at Halbeinstrasse 22, Basel, Switzerland.

Of 60 corneal grafts studied to determine the fate of corneal grafts in human beings, examinations were made in 11 cases at varying intervals from the fourth day postoperatively to five years. It was concluded that the tissue of the transplanted cornea survives.

Metastatic Carcinoma of the Choroid, Kenneth B. Johnston, M.D., *Canadian Medical Association Journal*, January, 1946, published monthly by the Canadian Medical Association, 3640 University Street, Montreal, P.Q., Canada.

The author emphasizes the differential diagnosis between metastatic carcinoma and primary melanosarcoma. In the four cases presented here, the primary carcinoma occurred in the breast, but the metastasis is conveyed to the eye by blood-borne emboli of tumor cells, through the internal carotid ophthalmic arteries and

through the short ciliary arteries to the posterior area of the choroid, with the tumors generally occurring on the temporal side of the disk. The cells follow the planes of the choroid and grow in a lateral direction.

Diagnosis, Differential Diagnosis and Therapy of Cystoid Edema of the Macula Lutea (Cysts of the Macula Lutea), A. Bangerter, M.D., *Ophthalmologica*, February-March, 1945, published bi-monthly at Halbeinstrasse 22, Basel, Switzerland.

The author reports the results of 6 years of observation among 50 cases of cystoid edema of the macula lutea and the most frequent conditions associated with it, which are retinitis pigmentosa, amotio retina, venous thrombosis and intra-ocular inflammation. While the ordinary ophthalmoscope does not lend itself to recognizing cystoid changes in the macula lutea at an early stage, red-free illumination and visualization by the slit-lamp will establish the diagnosis. Using red-free illumination alone will show the cyst as a large hole at the macula lutea, but examination with the slit-lamp will prove it to be a large cyst.

While the author reports relatively good results with atropine, it was effective mostly with cases which occur in old age accompanied by choroidal or retinal sclerosis.

Seasonal Variations in the Frequency of Idiopathic Detachment of the Retina, Roger Weekers, M.D., *Ophthalmologica*, September-October, 1945, published bi-monthly at Halbeinstrasse, 22 Basel, Switzerland.

Of all cases of retinal detachment treated at the Ophthalmologic Clinic of the University of Liège over a period of five years, secondary detachments such as those due to neoplasm, uveal inflammation, or those appearing after surgical intervention for cataract or glaucoma, were excluded from this study. For the remaining types, a classification of idiopathic detachment of the retina was made. Because the seasonal fluctuations of these types were 31 per cent in summer, 30 per cent in spring, 21 per cent in autumn and 18 per cent in winter, it was concluded that continued irradiation from the sun seemed to be a contributing factor in its etiology. The author concludes therefore that patients predisposed to retinal detachment should avoid glare and wear dark glasses on sunny days.

Book Reviews

AMERICAN FOUNDATIONS FOR SOCIAL WELFARE. Shelby M. Harrison and F. Emerson Andrew, New York: Russell Sage Foundation, 1946. 249 pp. ill.

This book is the successor to an earlier series of directories of foundations for social welfare. The first part, consisting of 100 pages, outlines the history of the rise of the foundation as an institution, and discusses organization and administration, financial policies, the range of activities, and current trends in the field of foundations in general.

Part II begins with a directory, alphabetically arranged, in substantially the form used in the earlier series. This section, however, also includes a list of foundations classified according to their designated fields of social welfare and a list arranged according to geographical distribution. There are a bibliography and a workmanlike index.

While the earlier directories filled a real need, this new and amplified volume doubtless will prove to be much more useful to workers and others interested in the field of public welfare. To persons seeking foundation aid, either as individuals or on behalf of institutions or agencies, it should provide invaluable assistance.

H. S. T.

TEXTBOOK OF OPHTHALMOLOGY. Sanford R. Gifford, M.A., M.D., F.A.C.S., Philadelphia: W. B. Saunders Company, 1945. Third edition, revised, 457 pp. ill.

With the new sections added, the mass of material assembled in this edition of the well-known text is so well coordinated that the essential facts of modern ophthalmology are presented without extraneous information.

The illustrations, which include drawings and photographs, have been improved by substitution and addition.

This revision was completed by Dr. Gifford before his death and is his last contribution to the field of medicine in which he played so prominent a part.

Contributors to This Issue

Dr. Bernard Samuels, who is a practicing ophthalmologist in New York City, is a member of the Board of Directors of this Society.

Mrs. Margaret R. Osterman is executive director of the District of Columbia Society for the Prevention of Blindness.

Dr. Adolph Posner has returned to private practice in New York upon his discharge from the Medical Corps of the Army of the United States. He is a member of the committee for standardization of tonometers, of the American Academy of Ophthalmology and Otolaryngology.

Mr. Lester R. Wheeler, who is associated with the Psycho-Educational Center at the University of Miami in Coral Gables, Florida, is developing a Reading Clinic there. He was formerly director of the Educational Clinic, East Tennessee State College, Johnson City, Tennessee.

